1. (CURRENTLY AMENDED) A diode laser assembly, comprising:

a substrate;

an epitaxial structure formed on the substrate;

a laser formed in the epitaxial structure ~~and~~ , the laser including first and second reflectors, a gain section and a phase section, the gain section and the phase section each being positioned between the first and second reflectors to ~~producing~~ produce a tunable laser output therefrom; and

an amplifier formed in the epitaxial structure, at least a portion of the laser and amplifier sharing a common waveguide, the tunable laser output being coupled to the amplifier along the common waveguide, and the amplifier generating an optical signal in response to the coupled tunable laser output, wherein at least a portion of the waveguide is curved ~~and an end of the waveguide terminates at an oblique angle~~ to reduce reflections from an output facet.

2. (ORIGINAL) The laser assembly of claim 1 wherein the common waveguide has non-uniform optical properties along its centerline.

3 (ORIGINAL) The laser assembly of claim 1 wherein the common waveguide has non-uniform cross-sectional area along its centerline.

4. (ORIGINAL) The laser assembly of claim 1 wherein the common waveguide has non-uniform curvature along its centerline.

5. (ORIGINAL) The laser assembly of claim 1 wherein the common waveguide has non-uniform optical properties normal to its centerline.

6. (ORIGINAL) The assembly of claim 1, wherein the amplifier includes at least one active region and at least one passive region.

7. (ORIGINAL) The assembly of claim 6, wherein the waveguide extends through an active region and a passive region.

8. (ORIGINAL) The assembly of claim 7, wherein a portion of the waveguide in the amplifier is curved.

9. (ORIGINAL) The assembly of claim 7, wherein at least a portion of the waveguide in a passive region of the amplifier is curved.

10. (ORIGINAL) The assembly of claim 7, wherein a portion of the waveguide in the amplifier is curved and the amplifier includes a flared waveguide section.

11. (ORIGINAL) The assembly of claim 7, wherein an interface between the active region and the passive region is oblique to a centerline of the waveguide.

12. (ORIGINAL) The assembly of claim 7, wherein an interface between the active region and the passive region is substantially normal to a centerline of the waveguide.

13. (ORIGINAL) The assembly of claim 7, wherein an end of the waveguide in the amplifier terminates at an oblique angle to an output facet.

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14. (ORIGINAL) The assembly of claim 6, wherein the waveguide includes a waveguide mode adapter.

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15. (ORIGINAL) The assembly of claim 1, wherein at least a portion of the waveguide is flared.

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16. (PREVIOUSLY AMENDED) The assembly of claim 15, wherein a flared portion of the waveguide is in an active region.

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17. (PREVIOUSLY AMENDED) The assembly of claim 15, wherein a flared portion of the waveguide is in a passive region.

18. (ORIGINAL) The assembly of claim 1, wherein the waveguide includes an active section.

19. (ORIGINAL) The assembly of claim 18, wherein the active section of the waveguide is positioned in the first active section of the amplifier.

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20. (ORIGINAL) The assembly of claim 18, wherein the active section of the waveguide is positioned in the second active section of the amplifier.

21. (ORIGINAL) The assembly of claim 6, wherein the first active region has a oblique distal face.

22. (ORIGINAL) The assembly of claim 1, wherein the amplifier includes a plurality of independently controllable active regions.

23. (ORIGINAL) The assembly of claim 22, wherein a first and a second active region are separated by a passive region.

24. (ORIGINAL) The assembly of claim 23, wherein the first active region has a oblique distal face.

25. (PREVIOUSLY AMENDED) The assembly of claim 23, wherein the second active region has an oblique proximal face.

26. (ORIGINAL) The assembly of claim 23, wherein the oblique distal face of the first active region is parallel to the oblique proximal face of the second active region.

27. (ORIGINAL) The assembly of claim 23, wherein the second active region has a oblique distal face.

28. (ORIGINAL) The assembly of claim 27, wherein the proximal face and the distal face of the second region are parallel.

29. (ORIGINAL) The assembly of claim 1, wherein the epitaxial structure has areas of differing optical properties.

30. (ORIGINAL) The assembly of claim 1, wherein the laser includes a mode selection element.

31. (ORIGINAL) The assembly of claim 30, wherein the mode selection element is a controllable phase shifting element.

32. (CURRENTLY AMENDED) The assembly of claim 1, wherein ~~the laser includes first and second reflectors and~~ at least one of the first and second reflectors is tunable.

33. (ORIGINAL) The assembly of claim 32, wherein at least one of the first and second reflectors is a distributed reflector.

34. (ORIGINAL) The assembly of claim 32, wherein both of the first and second reflectors are distributed reflectors.

B' cont'd

35. (ORIGINAL) The assembly of claim 32, wherein at least one of the first and second reflectors is a distributed Bragg reflector.

36. (ORIGINAL) The assembly of claim 32, wherein each of the first and second reflectors is a distributed Bragg reflector.

37. (ORIGINAL) The assembly of claim 32, wherein a maximum reflectivity of at least one of the first and second reflectors is tunable.

38. (ORIGINAL) The assembly of claim 32, wherein a maximum reflectivity of each of the first and second reflectors is tunable.

39. (ORIGINAL) The assembly of claim 32, wherein the maximum reflectivities of each of the first and second reflectors are tunable relative to each other.

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~~40.~~ (ORIGINAL) The assembly of claim 1, wherein the laser has a multi-active region gain medium.

41. (ORIGINAL) The assembly of claim 32, wherein the laser includes a controllable amplifier positioned outside of the laser.

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42. (ORIGINAL) The assembly of claim 32, wherein the laser includes a controllable attenuator positioned outside of the laser.

43. (ORIGINAL) The assembly of claim 32, wherein the laser includes an attenuator and at least one amplifier positioned outside of the laser.

44. (CURRENTLY AMENDED) A diode laser assembly, comprising:

a first semiconductor layer in an epitaxial structure;

a second semiconductor layer formed in the epitaxial structure, the first and second semiconductor layers having different dopings;

a waveguide layer formed between the first and second semiconductor layers, the first waveguide layer including a waveguide, a first reflector and a second reflector;

an optically active medium disposed between the first and second reflectors, the first and second reflectors defining a laser cavity and producing a tunable laser output; and

an amplifier formed in the epitaxial structure, wherein the laser cavity and the amplifier are optically aligned, the tunable laser output being coupled into the amplifier along the waveguide, and the amplifier generating an optical signal in response to the coupled tunable laser output, wherein at least a portion of the waveguide is curved ~~and an end of the waveguide terminates at an oblique angle~~ to reduce reflections from an output facet.

45. (ORIGINAL) The assembly of claim 44, wherein the amplifier includes a first active region and a passive region.

46. (ORIGINAL) The assembly of claim 45, wherein the waveguide extends through at least a portion of the amplifier.

47. (PREVIOUSLY AMENDED) The assembly of claim 45, wherein the waveguide extends through the first active region and the passive region.

48. (PREVIOUSLY AMENDED) The assembly of claim 44, wherein a distal portion of the waveguide in the amplifier is curved.

49. (PREVIOUSLY AMENDED) The assembly of claim ~~44~~ 47, wherein a distal end of the waveguide in the amplifier terminates at an oblique angle to an output facet.

50. (PREVIOUSLY AMENDED) The assembly of claim ~~45~~ 55, wherein the waveguide includes a mode adapter.

51. (ORIGINAL) The assembly of claim ~~44~~ 47, wherein at least a portion of the waveguide is flared.

52. (ORIGINAL) The assembly of claim ~~44~~ 47, wherein the waveguide includes an active section.

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53. (ORIGINAL) The assembly of claim 52, wherein the active section of the waveguide is positioned in the first active section of the amplifier.

54. (ORIGINAL) The assembly of claim 52, wherein the active section of the waveguide is positioned in the second active section of the amplifier.

55. (ORIGINAL) The assembly of claim ~~45~~ 55, wherein the first active region has an oblique distal face.

56. (ORIGINAL) The assembly of claim ~~45~~ 55, wherein the amplifier includes a second active region.

57. (PREVIOUSLY AMENDED) The assembly of claim ~~45~~ 55, wherein the first and second active regions are separated by a passive region.

58. (ORIGINAL) The assembly of claim 57, wherein the first active region has an oblique distal face.

59. (ORIGINAL) The assembly of claim 58, wherein the second active region has an oblique proximal face.

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60. (ORIGINAL) The assembly of claim 59, wherein the oblique distal face of the first active region is parallel to the oblique proximal face of the second active region.

61. (ORIGINAL) The assembly of claim 59, wherein the second active region has an oblique distal face.

62. (ORIGINAL) The assembly of claim 61, wherein the proximal face and the distal face of the second region are parallel.

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63. (ORIGINAL) The assembly of claim 44, wherein the epitaxial structure has areas of differing optical properties.

B' cont'd

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64. (ORIGINAL) The assembly of claim 44, wherein the laser includes a mode selection element.

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65. (ORIGINAL) The assembly of claim 64, wherein the mode selection element is a controllable phase shifting element.

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66. (ORIGINAL) The assembly of claim 44, wherein at least one of the first and second reflectors is tunable.

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67. (ORIGINAL) The assembly of claim 66, wherein at least one of the first and second reflectors is a distributed reflector.

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68. (ORIGINAL) The assembly of claim 66, wherein both of the first and second reflectors is a distributed reflector.

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69. (ORIGINAL) The assembly of claim 66, wherein at least one of the first and second reflectors is a distributed Bragg reflector.

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70. (ORIGINAL) The assembly of claim 66, wherein each of the first and second reflectors is a distributed Bragg reflector.

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71. (ORIGINAL) The assembly of claim ~~66~~ 67, wherein a maximum reflectivity of at least one of the first and second reflectors is tunable.

72. (ORIGINAL) The assembly of claim ~~66~~ 67, wherein a maximum reflectivity of each of the first and second reflectors is tunable.

73. (ORIGINAL) The assembly of claim ~~66~~ 67, wherein the maximum reflectivities of each of the first and second reflectors are tunable relative to each other.

74. (ORIGINAL) The assembly of claim ~~66~~ 67, wherein the laser includes a controllable amplifier positioned outside of the laser.

B1 cont'd

75. (ORIGINAL) The assembly of claim ~~66~~ 67, wherein the laser includes a controllable attenuator positioned outside of the laser.

76. (ORIGINAL) The assembly of claim ~~66~~ 67, wherein the laser includes an attenuator and at least one amplifier positioned outside of the resonant cavity.

77. (PREVIOUSLY ADDED) The assembly of claim 1, wherein at least a portion of the waveguide is non-parallel to an axis of the laser's cavity.

78. (PREVIOUSLY ADDED) The assembly of claim 1, wherein a width of the laser output is independent of a width of the waveguide at an output of the amplifier.

79. (PREVIOUSLY ADDED) The assembly of claim 1, wherein the optical signal is tunable within a range of at least 15 nm.

80. (PREVIOUSLY ADDED) The assembly of claim ~~44~~ 47, wherein at least a portion of the waveguide is non-parallel to an axis of the laser cavity.

81. (PREVIOUSLY ADDED) The assembly of claim ~~44~~ 47, wherein a width of the tunable laser output is independent of a width of the waveguide at an output of the amplifier.

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82. (PREVIOUSLY ADDED) The assembly of claim 44, wherein the optical signal is tunable within a range of at least 15 nm.